NORMAL VELOCITY OF GAS FLOW UNDER INVERTED WEIR

B=2 m 00 = width of furnace, corresponding to length of weir.

h_t =	1 mOO	Om 75	Om 50	0 m 30
A =	3.28	3.37	3.46	3.54
t	Velocity", Meters per Second = *v*			
500°	3.764	3.131	2.462	1.839
600°	4.123	3.428	2.691	2.014
700°	4.454	3.704	2.823	2.176
800°	4.761	3.959	3.108	2.326
900°	5.050	4.199	3.296	2.467
1000°	5.323	4.427	3.474	2.600
1100°	5.584	4.643	3.677	2.727
1200°	5.832	4.849	3.806	2.849
1300°	6.069	5.047	3.961	2.965
1400°	6.299	5.238	4.140	3.077
1500°	6.520	5.422	4.255	3.185
1600°	6.736	5.599	4.394	3.289
1700°	6.941	5.772	4.530	3.390
1800°	7.142	5.939	4.661	3.489
Qt =	2.00/>	1.50*	l.OOw	0.600

These tables shows that, for a horizontal roof, the velocity of the hot gases ordinarily varies from 1 m 94 to 8 m 29 per second. And, as in reverberatory furnaces, it is necessary that the hot gases should remain in the furnace a sufficient time to give up heat to the material being heated, in certain industrial heating applications there will be found to be a relationship between the circulation velocity of the hot gases and the application. But it is evident, on the other hand, that there should be no necessity for accelerating the velocity of the hot gases, because this would lead to the construction of extremely long furnaces.

A number of attempts have been made to determine the time which is required for the transmission of the heat in the hot gases to the materials being heated and to the walls of the furnace. Observations and computations have led to the establishment of two limits